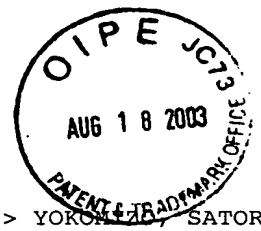
Rec'd PCT/PTO 18 AUG 2003
10/019543



SEQUENCE LISTING

<110> YOKOMIZO, SATORU
FUKUCHI, TAKESHI
OSAKADA, FUMIO
MATSUMOTO, KEIJI
TAKAGI, MASAMICHI
OHTA, AKINORI

<120> TRANSFORMANT AND PROCESS FOR PRODUCING POLYESTER BY USING THE SAME

<130> 12218/3

<140> 10/019,543
<141> 2002-01-03

<150> PCT/JP01/04158
<151> 2001-05-18

<150> JP 148726/2000
<151> 2000-05-19

<150> JP 396955/2000
<151> 2000-12-27

<150> JP 16929/2001
<151> 2001-01-25

<160> 21

<170> PatentIn Ver. 2.1

<210> 1
<211> 1785
<212> DNA
<213> Aeromonas caviae

<400> 1
atgagccaac catcttatgg cccgctgttc gaggccctgg cccactacaa tgacaagctg 60
ctggccatgg ccaaggccca gacagagcgc accgcccagg cgctgctgca gaccaatctg 120
gacgatctgg gccaggtgct ggagcagggc agccagcaac cctggcagct gatccaggcc 180
cagatgaact ggtggcagga tcagctcaag ctgatgcagc acaccctgct caaaagcgca 240
ggccagccga gcgagccggt gatcaccccg gagcgcagcg atcgccgctt caaggccgag 300
gcctggagcg aacaacccat ctatgactac ctcaagcagt cctacctgct caccgccagg 360
cacctgctgg cctcggtgga tgccctggag ggcgtccccc agaagagccg ggagcggctg 420
cgtttcttca cccgccagta cgtcaacgcc atggcccccа gcaacttcct ggccaccaac 480
cccgagctgc tcaagctgac cctggagtcc gacggccaga acctggtgcg cggactggcc 540
ctcttggccg aggatctgga gcgcagcgcc gatcagctca acatccgcct gaccgacgaa 600
tccgccttcg agctcgggcg ggatctggcc ctgaccccgg gccgggtggt gcagcgcacc 660
gagctctatg agctcattca gtacagcccg actaccgaga cggtgggcaa gacacctgtg 720
ctgatagtgc cgcccttcat caacaagtac tacatcatgg acatgcggcc ccagaactcc 780
ctggtcgcct ggctggtcgc ccagggccag acggtattca tgatctcctg gcgcaacccg 840
ggcgtggccc aggcccaaat cgatctcgac gactacgtgg tggatggcgt catcgccgcc 900
ctggacggcg tggaggcggc caccggcgag cgggaggtgc acggcatcgg ctactgcatc 960
ggcggcaccg ccctgtcgct cgccatgggc tggctggcgg cgcggcgcca gaagcagcgg 1020
gtgcgcaccg ccaccctgtt cactaccctg ctggacttct cccagcccgg ggagcttggc 1080
atcttcatcc acgagcccat catagcggcg ctcgaggcgc aaaatgaggc caagggcatc 1140
atggacgggc gccagctggc ggtctccttc agcctgctgc gggagaacag cctctactgg 1200

aactactaca tcgacagcta cctcaagggt cagagcccgg tggccttcga tctgctgcac 1260
tggaacagcg acagcaccaa tgtggcgggc aagacccaca acagcctgct gcgccgtctc 1320
tacctggaga accagctggt gaaggggggag ctcaagatcc gcaacacccg catcgatctc 1380
ggcaaggtga agacccctgt gctgctggtg tcggcggtgg acgatcacat cgccctctgg 1440
cagggcacct ggcagggcat gaagctgttt ggcggggagc agcgcttcct cctggcggag 1500
tccggccaca tcgccggcat catcaacccg ccggccgcca acaagtacgg cttctggcac 1560
aacggggccg aggccgagag cccggagagc tggctggcag gggcgacgca ccagggcggc 1620
tcctggtggc ccgagatgat gggctttatc cagaaccgtg acgaagggtc agagcccgtc 1680
cccgcgcggg tcccggagga agggctggcc cccgcccccg gccactatgt caaggtgcgg 1740
ctcaaccccg tgtttgcctg cccaacagag gaggacgccg catga 1785

<210> 2
<211> 405
<212> DNA
<213> Aeromonas caviae

<400> 2
atgagcgcac aatccctgga agtaggccag aaggcccgtc tcagcaagcg gttcggggcg 60
gcggaggtag ccgccttcgc cgcgctctcg gaggacttca acccccctgca cctggacccg 120
gccttcgccg ccaccacggc gttcgagcgg cccatagtcc acggcatgct gctcgccagc 180
ctcttctccg ggctgctggg ccagcagttg ccgggcaagg ggagcatcta tctgggtcaa 240
agcctcagct tcaagctgcc ggtctttgtc ggggacgagg tgacggccga ggtggaggtg 300
accgcccttc gcgaggacaa gcccatcgcc accctgacca cccgcatctt cacccaaggc 360
ggcgccctcg ccgtgacggg ggaagccgtg gtcaagctgc cttaa 405

<210> 3
<211> 1785
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: PHA synthase gene

<400> 3
atgtctcaac catcttatgg tccattgttc gaagctttgg ctcattacaa tgataaattg 60
ttggctatgg ctaaagctca aaccgaaaga actgctcaag ccttgttgca aactaacttg 120
gatgatttgg gtcaagtttt ggaacaaggt tctcaacaac catggcaatt gattcaagct 180
caaatgaatt ggtggcaaga tcaattaaaa ttgatgcaac acactttgtt aaaatctgct 240
ggtcaaccat ctgaaccagt tattactcca gaaagatctg atagaagatt taaagctgaa 300
gcttggtctg aacaaccaat ttatgattac ttaaaacaat cctatttgtt aactgctaga 360
catttgttgg cttctgttga tgctttggaa ggtgtcccac aaaaatctag agaaagattg 420
agattcttta ctagacaata cgtcaacgct atggctccat ctaatttctt ggctactaac 480
ccagaattgt taaaattgac tttggaatcc gatggtcaaa atttggttag aggtttggct 540
ttattggctg aagatttgga aagatctgct gatcaattaa acattagatt gactgatgaa 600
tccgcttttg aattaggtag agatttggct ttgactccag gtagagttgt tcaaagaact 660
gaattatatg aattaattca atactctcca actactgaaa ccgttggtaa aaccccagtt 720
ttgatcgttc caccattcat taataaatat tacattatgg atatgagacc acaaaactcc 780
ttggtcgctt ggttggtcgc tcaaggtcaa accgttttca tgatttcctg gagaaaccca 840
ggtgttgctc aagctcaaat tgatttagat gattatgttg ttgatggtgt cattgctgct 900
ttggatggtg ttgaagccgc tactggtgaa agagaagttc acggtattgg ttactgtatt 960
ggtggtaccg ctttgtcttt agctatgggt tggttggccg ccagaagaca aaaacaaaga 1020
gttagaactg ctactttgtt tactactttg ttggatttct cccaaccagg tgaattgggt 1080
atttttattc atgaaccaat tatcgccgcc ttagaagccc aaaatgaagc taaaggtatt 1140
atggatggta gacaattggc cgtctccttc tctttgttga gagaaaactc tttatattgg 1200
aattactata ttgattctta cttaaaaggt caatctccag ttgcttttga tttgttgcac 1260
tggaactctg attctactaa tgttgccggt aaaactcata actctttgtt gagaagatta 1320

tatttggaaa atcaattggt taaaggtgaa ttaaaaatta gaaacactag aattgattta 1380
ggtaaagtta aaactccagt tttgttggtt tctgccgttg atgatcacat tgctttatgg 1440
caaggtacct ggcaaggtat gaaattgttc ggtggtgaac aaagattttt attggccgaa 1500
tccggtcata ttgctggtat tattaatcca ccagctgcta acaaatacgg tttctggcac 1560
aatggtgctg aagctgaatc tccagaatct tggttggctg gtgccaccca tcaaggtggt 1620
tcctggtggc cagaaatgat gggttttatt caaaacagag atgaaggttc tgaaccagtc 1680
ccagccagag tcccagaaga aggtttggct ccagctccag gtcactatgt caaagttaga 1740
ttaaacccag ttttcgcttg tccaaccgaa gaagatgctg cttaa 1785

<210> 4
<211> 405
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: (R)- specific enoyl-CoA hydratase gene

<400> 4
atgtctgctc aatccttgga agttggtcaa aaagctagat tatctaaaag attcggtgcc 60
gccgaagttg ctgcttttgc tgccttatct gaagatttca acccattgca cttggatcca 120
gcttttgctg ctactaccgc cttcgaaaga ccaatcgtcc atggtatgtt gttagcttct 180
ttattttccg gtttgttggg tcaacaattg ccaggtaaag gttctattta tttgggtcaa 240
tctttatctt tcaaattgcc agtctttgtc ggtgatgaag ttaccgctga agttgaagtt 300
actgctttga gagaagataa accaattgct actttgacta ctagaatttt cactcaaggt 360
ggtgctttag ctgttaccgg tgaagctgtt gtcaaattgc cataa 405

<210> 5
<211> 1036
<212> DNA
<213> Yarrowia lipolytica

<220>
<223> promoter ALK3p

<400> 5
ctgcagcggc gagaccggtt ctgggccgac tacgacgtgc ctggagggac gctccgggag 60
aatctctttg gacgggccaa gatcttcccc gaccaccctg ccggacagta caagtgggaa 120
gaggggggagt ttcccttgac caagagtgac aagagtgaga acggcaatgg agtcaatgga 180
gatgagcccg ctactaagaa acaaaaaatc tgaacaagag ccggttttag tacgatacaa 240
gagccggtac gtggacatgc agctgctttt cgaacatgaa gggagcacga ccccacgtat 300
cagtattatg caagggacca gaagtggcct cggcaaaaga ttggcctcgg tcaacaaaag 360
gtcatcatat ccgtctccgc atccgtctgt acgtgaatta tgttacttgt atctttactg 420
tactggtttg gagctacgtc gccaactaat gccaaccagt cctgtggtgt gtctataggt 480
atgtaataca agtacgagta aatgtattgt actggtgcag cacagtagat gacggagacg 540
atgaatcggt caccacccac aaacattgcc tccaaacacc gttatattgt cttactgtcg 600
tggctgagac agactcctcg gggccttgta agaggggggaa tgtgtgagac agatgcccac 660
aagtgaccat gcattttgtg gggcaggaga aaaaccaatg tttgtgggga tagaacccat 720
caaatgaatc taaatgaact ctcccaaaat gaaccactct cttcctccaa tcaaagccct 780
gcgaaatgtc ctccgtctgt ttctcggacc cttagccgta cgacgccata ttacgatagc 840
ccgccacctt aatgcgttta acttgcatgc atgcgtctgc atacagctgc atctgtcata 900
tatgcaccat ttccccacac aactgaagtt tatatatata tactgtaagg actcctgaag 960
tggcacgaac acacctgatc acagcaacat tacagtacac tactctgctc gtattttaca 1020
atactggacg aaaatg 1036

<210> 6
<211> 1017
<212> DNA
<213> Candida maltosa

<220>
<223> promoter ALK1p

<400> 6
atgcatgaac aggatttaat cccaagaaaa aagtctattt tctattttca caaggaaact 60
ggaaaaacct ttttgtgttt tgaagtagct ccgtaataac ctgtaaaaaa ataaattttg 120
aagatttgac ttgctgatga aaatgctatc agtgtagctc tagacttgat actagactat 180
gatggcaaca catggtggtc aacgtgcaag acatcaccca atgagaagac tgctaaccag 240
aaaaaaaagg ggacaaaaga aaaactcgag agaaaaagtc aaattggtgt aaaattggct 300
atttttggta ctttcctaat ggggaaatta attgtttaaa attccagttt ttccagagtt 360
aagatttcga ccaattattt ttaatccata tgatcttcat cattatcaac ttgtgaaaaa 420
taataatcga ggtacgttta atacgagata ttagtctacg gctatgaatg ttggatatac 480
ttcattgacg atcagaagct tgattggtta ttcaggtgca tgtgtggata taaacccaac 540
aaattatcta gcaactgtgc cttccccaca ttggtcaaag aaaccctaaa gcaaattaaa 600
atctggataa ataaatcatt catttcacat tttccggtta gtataaggtt ttttaaattt 660
ttttttacag tttagccctt tcaattacca aatacggtaa caatgtgctt tgtaacatgc 720
aggggatttt ctccgttgct gttttctcca catgctttta atgtgtaata aattaaaaaa 780
attacaaaga aaaaccggca tataagcatc ggagtttaca ttgttaacta actgcaaaat 840
ggcgatgttt caaatcaaca aaatttaaaa aaaccccaaa aaaaaagtat catataaatt 900
aaactcaaaa tccttttgat tgcataaaat ttttaaatct cttctttttt ttctttttta 960
ctttcttatc tattctattc ttttttttata tatctaattc atttataaca tctggtc 1017

<210> 7
<211> 218
<212> DNA
<213> Candida maltosa

<220>
<223> terminater ALK1t

<400> 7
atagatggat ttttcttttt tatgtgtatt tccggttaat aaatgtttaa attttttttt 60
taataaaaat atttgtagtt atttatatgc aaaaaaaaaa aatattcaaa gcaatcttcc 120
tttctttctt tatctttccc ccatgctaag gtctaaaaca ccacaactta aaacccaact 180
taaccgtata atactaagat caatctccaa agatgcat 218

<210> 8
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 8
gctctagact gcagcggcga gaccggttct gg 32

<210> 9
<211> 35

<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 9
ggacacatat gcgtccagta ttgtaaaata cgagc 35

<210> 10
<211> 33
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 10
tccccgcggc tgcagcggcg agaccggttc tgg 33

<210> 11
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 11
ggacacatat gagccaacca tcttatggcc c 31

<210> 12
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 12
cccagatcgt ccagattggt ctgcag 26

<210> 13
<211> 31
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 13
ggacacatat gagcgcacaa tccctggaag t 31

<210> 14
<211> 29
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 14
ggggtacctt aaggcagctt gaccacggc 29

<210> 15
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 15
tttttcagct ggagctcgtc gacatgcatg aacaggattt aatccc 46

<210> 16
<211> 39
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 16
ccggaattcc atatgcagat gttataaatg aattagata 39

<210> 17
<211> 32
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 17
cggaagctta tagatggatt tttctttttt at 32

<210> 18
<211> 46
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Primer

<400> 18
tttttgatat cgagctcgtc gacatgcatc tttggagatt gatctt 46

<210> 19
<211> 5804
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: Plasmid pSUT5
derived from E. coli/Yarrowia lipolytica

<400> 19
aggccattct cgttactgcc aaaacaccac ggtaatcggc cagacaccat ggacgagtat 60
ctgtctgact cgtcattgcc gcctttggag tacgactcca actatgagtg tgcttggatc 120
actttgacga tacattcttc gttggaggct gtgggtctga cagctgcgtt ttcggcgcgg 180
ttggccgaca acaatatcag ctgcaacgtc attgctggct ttcatcatga tcacattttt 240
gtcggcaaag gcgacgccca gagagccatt gacgttcttt ctaatttgga ccgatagccg 300
tatagtccag tctatctata agttcaacta actcgtaact attaccataa catatacttc 360
actgccccag ataaggttcc gataaaaagt tctgcagact aaatttattt cagtctcctc 420
ttcaccacca aaatgccctc ctacgaagct cgagctaacg tccacaagtc cgcctttgcc 480
gctcgagtgc tcaagctcgt ggcagccaag aaaaccaacc tgtgtgcttc tctggatgtt 540
accaccacca aggagctcat tgagcttgcc gataaggtcg gaccttatgt gtgcatgatc 600
aagacccata tcgacatcat tgacgacttc acctacgccg gcactgtgct ccccctcaag 660
gaacttgctc ttaagcacgg tttcttcctg ttcgaggaca gaaagttcgc agatattggc 720
aacactgtca agcaccagta caagaacggt gtctaccgaa tcgccgagtg gtccgatatc 780
accaacgccc acggtgtacc cggaaccgga atcattgctg gcctgcgagc tggtgccgag 840
gaaactgtct ctgaacagaa gaaggaggac gtctctgact acgagaactc ccagtacaag 900
gagttcctgg tcccctctcc caacgagaag ctggccagag gtctgctcat gctggccgag 960
ctgtcttgca agggctctct ggccactggc gagtactcca agcagaccat tgagcttgcc 1020
cgatccgacc ccgagtttgt ggttggcttc attgcccaga accgacctaa gggcgactct 1080
gaggactggc ttattctgac ccccggggtg ggtcttgacg acaagggaga cgctctcgga 1140
cagcagtacc gaactgttga ggatgtcatg tctaccggaa cggatatcat aattgtcggc 1200
cgaggtctgt acggccagaa ccgagatcct attgaggagg ccaagcgata ccagaaggct 1260
ggctgggagg cttaccagaa gattaactgt tagaggttag actatggata tgtcatttaa 1320
ctgtgtatat agagagcgtg caagtatgga gcgcttgttc agcttgtatg atggtcagac 1380
gacctgtctg atcgagtatg tatgatactg cacaacctgt gtatccgcat gatctgtcca 1440
atggggcatg ttgttgtgtt tctcgatacg gagatgctgg gtacaagtag ctaatacgat 1500
tgaactactt atacttatat gaggcttgaa gaaagctgac ttgtgtatga cttattctca 1560
actacatccc cagtcacaat accaccactg cactaccact acaccaaaac catgatcaaa 1620
ccacccatgg acttcctgga ggcagaagaa cttgttatgg aaaagctcaa gagagagaag 1680
ccaagatact atcaagacat gtgtcgcaac ttcaaggagg accaagctct gtacaccgag 1740
aaacaggcta gctcgtcgtg ttcaggaact gttcgatggt tcggagagag tcgccgccca 1800
gaacatacgc gcaccgatgt cagcagacag ccttattaca agtatattca agcaagtata 1860
tccgtagggt gcgggtgatt tggatctaag gttcgtactc aacactcacg agcagcttgc 1920
ctatgttaca tccttttatc agacataaca taattggagt ttacttacac acggggtgta 1980
cctgtatgag caccacctac aattgtagca ctggtacttg tacaaagaat ttattcgtac 2040
gaatcacagg gacggccgcc ctcaccgaac cagcgaatac ctcagcggtc ccctgcagtg 2100
actcaacaaa gcgatatgaa catcttgcga tggtatcctg ctgatagttt ttactgtaca 2160
aacacctgtg tagctccttc tagcattttt aagttattca cacctcaagg ggagggataa 2220
attaaataaa ttccaaaagc gaagatcgag aaactaaatt aaaattccaa aaacgaagtt 2280
ggaacacaac cccccgaaaa aaaacaacaa acaaaaaacc caacaaaata aacaaaaaca 2340
aaataaatat ataactacca gtatctgact aaaagttcaa atactcgtac ttacaacaaa 2400
tagaaatgag ccggccaaaa ttctgcagaa aaaaatttca aacaagtact ggtataatta 2460
aattaaaaaa cacatcaaag tatcataacg ttagttattt tattttattt aataaaagaa 2520
aacaacaaga tgggctcaaa actttcaact tatacgatac ataccaaata acaatttagt 2580
atttatctaa gtgcttttcg tagataatgg aatacaaatg gatatccaga gtatacacat 2640
ggatagtata cactgacacg acaattctgt atctctttat gttaactact gtgaggcatt 2700
aaatagagct tgatatataa aatgttacat ttcacagtct gaacttttgc agattaccta 2760

atttggtaag atattaatta tgaactgaaa gttgatggca tccctaaatt tgatgaaaga 2820
tgaaattgta aatgaggtgg taaaagagct acagtcgttt tgttttgaga taccatcatc 2880
tctaacgaaa tatctattaa aaatctcagt gtgatcatga gtcattgcca tcctggaaaa 2940
tgtcatcatg gctgatattt ctaactgttt acttgagata aatatatatt tacaagaact 3000
tcccttgaaa ttaatttaga tataaaatgt ttgcgggcaa gttactacga ggaataaatt 3060
atatctgttg actagaagtt atgaacattc agtatatatg cacatataat aaccaacttc 3120
ggccctttcg tctcgcgcgt ttcggtgatg acggtgaaaa cctctgacac atgcagctcc 3180
cggagacggt cacagcttgt ctgtaagcgg atgccgggag cagacaagcc cgtcagggcg 3240
cgtcagcggg tgttggcggg tgtcggggct ggcttaacta tgcggcatca gagcagattg 3300
tactgagagt gcaccatacg cgcgctatag ggcgaattgg agctccaccg cggtggcggc 3360
cgctctagaa ctagtggatc ccccgggctg caggaattcg atatcaagct tatcgatacc 3420
gtcgacctcg agggggggcc cggtacccag cttttgtccc tgcgcgctat gcggtgtgaa 3480
ataccgcaca gatgcgtaag gagaaaatac cgcatcaggc gctgcattaa tgaatcggcc 3540
aacgcgcggg gagaggcggt ttgcgtattg ggcgctcttc ctaggcaatt aacagatagt 3600
ttgccggtga taattctctt aacctcccac actcctttga cataacgatt tatgtaacga 3660
aactgaaatt tgaccagata ttgttgtaaa tagaaaatct ggcttgtagg tggcaaaatc 3720
ccgtctttgt tcatcaattc cctctgtgac tactcgtcat ccctttatgt tcgactgtcg 3780
tatttcttat tttccataca tatgcaagtg agatgcccgt gtcctcctcg ctcactgact 3840
cgctgcgctc ggtcgttcgg ctgcggcgag cggtatcagc tcactcaaag gcggtaatac 3900
ggttatccac agaatcaggg gataacgcag gaaagaacat gtgagcaaaa ggccagcaaa 3960
aggccaggaa ccgtaaaaag gccgcgttgc tggcgttttt ccataggctc cgccccctg 4020
acgagcatca caaaaatcga cgctcaagtc agaggtggcg aaacccgaca ggactataaa 4080
gataccaggc gtttcccccct ggaagctccc tcgtgcgctc tcctgttccg accctgccgc 4140
ttaccggata cctgtccgcc tttctccctt cgggaagcgt ggcgctttct caatgctcac 4200
gctgtaggta tctcagttcg gtgtaggtcg ttcgctccaa gctgggctgt gtgcacgaac 4260
cccccgttca gcccgaccgc tgcgccttat ccggtaacta tcgtcttgag tccaacccgg 4320
taagacacga cttatcgcca ctggcagcag ccactggtaa caggattagc agagcgaggt 4380
atgtaggcgg tgctacagag ttcttgaagt ggtggcctaa ctacggctac actagaagga 4440
cagtatttgg tatctgcgct ctgctgaagc cagttacctt cggaaaaaga gttggtagct 4500
cttgatccgg caaacaaacc accgctggta gcggtggttt ttttgtttgc aagcagcaga 4560
ttacgcgcag aaaaaaagga tctcaagaag atcctttgat cttttctacg gggtctgacg 4620
ctcagtggaa cgaaaactca cgttaaggga ttttggtcat gagattatca aaaaggatct 4680
tcacctagat ccttttaaat taaaaatgaa gttttaaatc aatctaaagt atatatgagt 4740
aaacttggtc tgacagttac caatgcttaa tcagtgaggc acctatctca gcgatctgtc 4800
tatttcgttc atccatagtt gcctgactcc ccgtcgtgta gataactacg atacgggagg 4860
gcttaccatc tggccccagt gctgcaatga taccgcgaga cccacgctca ccggctccag 4920
atttatcagc aataaaccag ccagccggaa gggccgagcg cagaagtggt cctgcaactt 4980
tatccgcctc catccagtct attaattgtt gccgggaagc tagagtaagt agttcgccag 5040
ttaatagttt gcgcaacgtt gttgccattg ctacaggcat cgtggtgtca cgctcgtcgt 5100
ttggtatggc ttcattcagc tccggttccc aacgatcaag gcgagttaca tgatccccca 5160
tgttgtgcaa aaaagcggtt agctccttcg gtcctccgat cgttgtcaga agtaagttgg 5220
ccgcagtgtt atcactcatg gttatggcag cactgcataa ttctcttact gtcatgccat 5280
ccgtaagatg cttttctgtg actggtgagt actcaaccaa gtcattctga gaatagtgta 5340
tgcggcgacc gagttgctct tgcccggcgt caatacggga taataccgcg ccacatagca 5400
gaactttaaa agtgctcatc attggaaaac gttcttcggg gcgaaaactc tcaaggatct 5460
taccgctgtt gagatccagt tcgatgtaac ccactcgtgc acccaactga tcttcagcat 5520
cttttacttt caccagcgtt tctgggtgag caaaaacagg aaggcaaaat gccgcaaaaa 5580
agggaataag ggcgacacgg aaatgttgaa tactcatact cttccttttt caatattatt 5640
gaagcattta tcagggttat tgtctcatga gcggatacat atttgaatgt atttagaaaa 5700
ataaacaaat aggggttccg cgcacatttc cccgaaaagt gccacctgac gtctaagaaa 5760
ccattattat catgacatta acctataaaa ataggcgtat cacg 5804

<210> 20
<211> 10
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence: linker DNA

<400> 20
tactctagag 10

<210> 21
<211> 1820
<212> DNA
<213> Candida maltosa

<220>
<221> misc_feature
<222> (538)..(1413)
<223> Ade1

<400> 21
gatccccttc ttcaaacctt taaatgacat tgtttcgttt ctctatgttt ggtatcggtt 60
cttcttcttc ttcaaaaaaa agggggcac tattcaaaaa aaaatattat aacagtatga 120
ttttttttccc tctcccgtcg attgaggttt tttttttctc tttcgtcttg gtcttttgct 180
tttcactcca aaaatggaaa cacgcgcggc tcaactcgaa atccgtgatc aaaaaaataa 240
aggctgtgag tttcgagcca ataattatga attagtggta tttttttttaa agataaataa 300
tcaagaatcg cattagggag acgaatatgc gttattcaaa taaaaagaca attcttttag 360
ggtagcattt cccttcaagt tcatcccaca tgtacattaa tgtcaatgat gtcgcagaag 420
ttaaattagc agaagaaaaa aaaaatgtga attactccga gtcaactctt ctttctcttc 480
ttctttttct tctttatcac cataatcacc accaccacca ccaccaccag ctcccagatg 540
acttcaacta acttagaagg aactttccca ttgattgcca aaggtaaagt cagagatatt 600
taccaagttg acgacaacac tcttttattc gttgctactg atagaatttc cgcatacgat 660
gtgattatgt ctaatggtat cccaaataaa ggtaaaatct taaccaaatt gtctgaattc 720
tggtttgatt tcttgccaat tgaaaaccat ttaatcaaag gagacatttt ccaaaaatat 780
cctcaactag aaccatatag aaaccaattg gaaggcagat ccttacttgt tagaaaattg 840
aaattgatcc ctcttgaagt tattgttaga ggttacatca ccggttccgg ctggaaagaa 900
taccaaaaat ctaaaaccgt ccacggtatt cctattggtg atgtggttga atcacaacaa 960
atcactccta tcttcacccc atccactaaa gcagaacaag gtgaacatga tgaaaatatc 1020
accaaagaac aagctgacaa gattgttgga aaagaattat gtgatagaat tgaaaaaatt 1080
gctattgatt tgtacaccaa agccagagat tacgctgcca ctaaaggaat tattatcgct 1140
gatactaaat ttgaatttgg tttagatggt gacaacatcg ttcttgttga cgaagtttta 1200
actccagatt cttccagatt ctggaatgct gctaaatacg aagttggtaa atctcaagac 1260
tcttacgata aacaattttt gagagattgg ttaacttcta atggtgttgc tggtaaagat 1320
ggtgttgcta tgcctgaaga cattgtcact gaaaccaaga gcaaatacgt tgaagcttac 1380
gaaaatttaa ctggtgacaa atggcaagaa taaattaagg atatctatta ttaaagcttt 1440
ctatttatcc caaactttcg tagtattttc tgacatgttc agatgttttt actttatctt 1500
tcctgaaatt tttgatttct aaccgactct tgcatgtagc tcttgataat gcaacatatg 1560
cttgaccatt agcaaaactt ctacctaaat ctattttgac tctgtccaaa gtttgacctt 1620
gagctttgtg gatcgacatc gcccacgaca agatcatttg gtttgttttt atggtgggtt 1680
attggcactt ggtgcaactg atggtttaac tttggaagag gctaagaaat tgaagacttg 1740
gaatgaagaa cgtgcatctg atttcaaatt gggtgaagaa ttgacttata cttgttataa 1800
aatgtatcat gatgttgatc 1820